

National Association of State Energy Officials
Annual Conference
September 10, 2012



Energy Efficiency a Competitive Advantage

Steve Schultz
Corporate Energy Manager
3M



Enabling Customer Success: Our Six Market-leading Businesses

Through our six market-leading businesses, we turn our ideas into ingenious products and solutions that make life better for our customers and end-users every day



Industrial & Transportation

From underground to outer space – changing how industry works



Health Care

Promoting health and improving quality care



Consumer & Office

Simplifying life and work



Safety, Security & Protection Services

Keeping you safe and your world secure



Display & Graphics

Enhancing visual communication and interactivity



Electro & Communications

Enabling the global power and telecommunications networks and the world's electronic devices

- Sales: \$29.6 B
- Net income: \$4.3 B
- R&D investment \$1.6 B (5.3% to sales)
- International sales \$19.6 B (66% of company total)
- Companies in 67 countries
- Sales in nearly 200 countries
- ~ 84,000 employees
- ~ 10,000 technical employees
- 85 laboratories globally
- 35 customer technical centers
- 200+ factories
- 55,000+ products
- 46 established technology platforms
- 2,600+ patents issued in 2011
- 38,500+ issued and pending patents

2015 Sustainability Goals for Continuous Improvement

Environmental Stewardship

- Reduce Volatile Air Emissions 15% by 2015 from 2010 base year
- Reduce Waste 10% by 2015 from 2010 base year
- Improve Energy Efficiency 25% by 2015 from 2005 base year
- Reduce Greenhouse Gas Emissions 5% by 2011 from 2006 base year *
- Develop Water Conservation Plans When 3M is Located in Water Scarce and Stressed Areas

Social Responsibility

- Develop Community Stakeholder Engagement Plans at Select Facilities
- Promote an EHS Management Framework at New 3M Sites

Economic Success

- Review at least 80% of Supplier Spend by 2015 to Drive Conformance with 3M EHS, Transportation & Labor/Human Relations Standard
- Further Enhance Environmental Sustainability Attributes of New Products

* Goal established in 2007



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3M Global Operations

Energy
Efficiency
as a 3M
Competitive
Advantage

3M Energy Management Program

Research and
Development

New Products
and Processes

Engineering

New Facilities
and Equipment

Support
Implementation
of Energy
Projects

Existing
Operations

Plant Energy
Teams

Sourcing

Procurement of
Energy

Environmental
Operations

Cooperate and
Leverage
Energy Related
Environmental
Aspects

Suppliers

Reduce
Imbedded
Energy Costs,
Environmental
Impacts, and
Future Risks

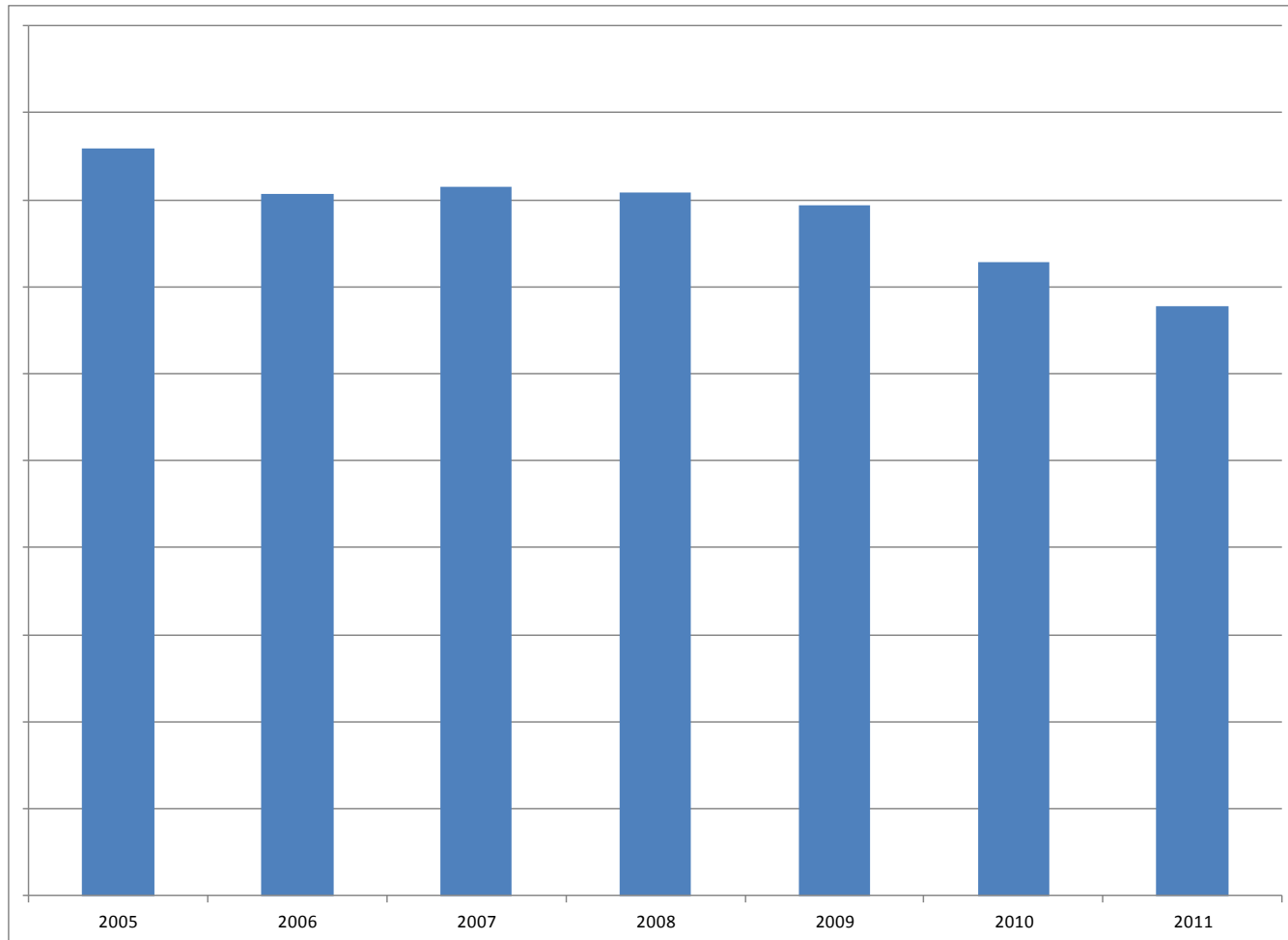
Customers

Add Value to
Customer
Relationships



Our Energy Management Results

Btu's per Unit of Product



21% Improvement in Energy Utilization!



ENERGY STAR® is a key component of our program

- Guidelines for Energy Management
- Account representative
- Communication materials
- Monthly web conferences
- Networking opportunities
- Recognition





Use ENERGY STAR Tools to Help Manufacturers Improve Energy Efficiency

Betsy Dutrow
ENERGY STAR
US EPA

September 10, 2012



Learn more at energystar.gov

Background



ENERGY STAR:

- Voluntary government program established by EPA in 1992
 - Helps companies achieve their best in energy efficiency
- THE national symbol for energy efficiency
 - Awareness exceeds 80%
 - Brand owned & managed by federal government
- Helps industry to build strong energy management programs and recognizes successes
- Industry participates
 - Over **700** industrial corporations are partners
 - Over **18** specialized industrial sectors address their energy management issues with ENERGY STAR

The ENERGY STAR approach



Effective energy management practices

+

Strong company energy programs

+

Organizational culture focused on efficiency

=

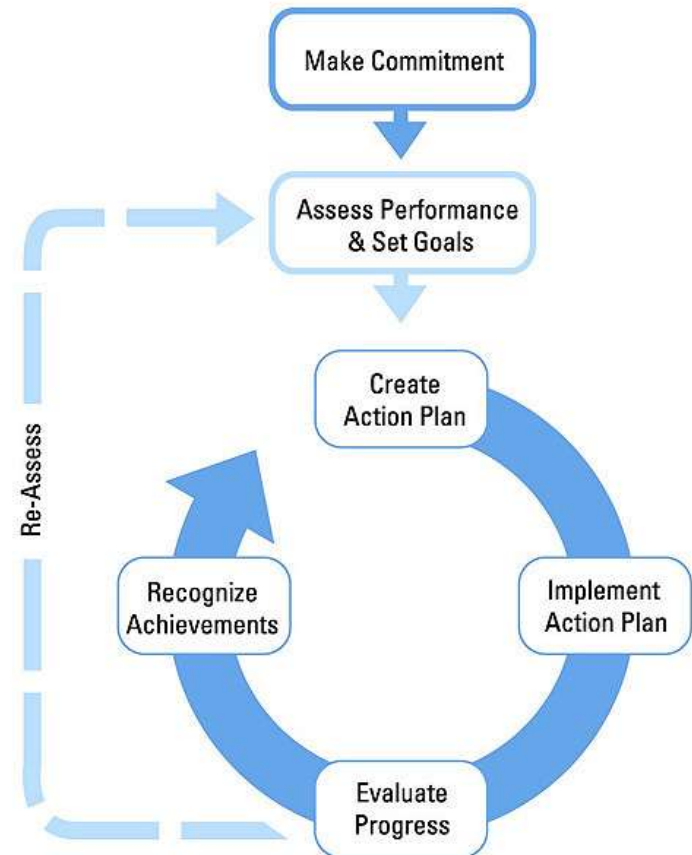
Continuous energy performance improvement

First, build an effective program

ENERGY STAR's Guidelines for Energy Management

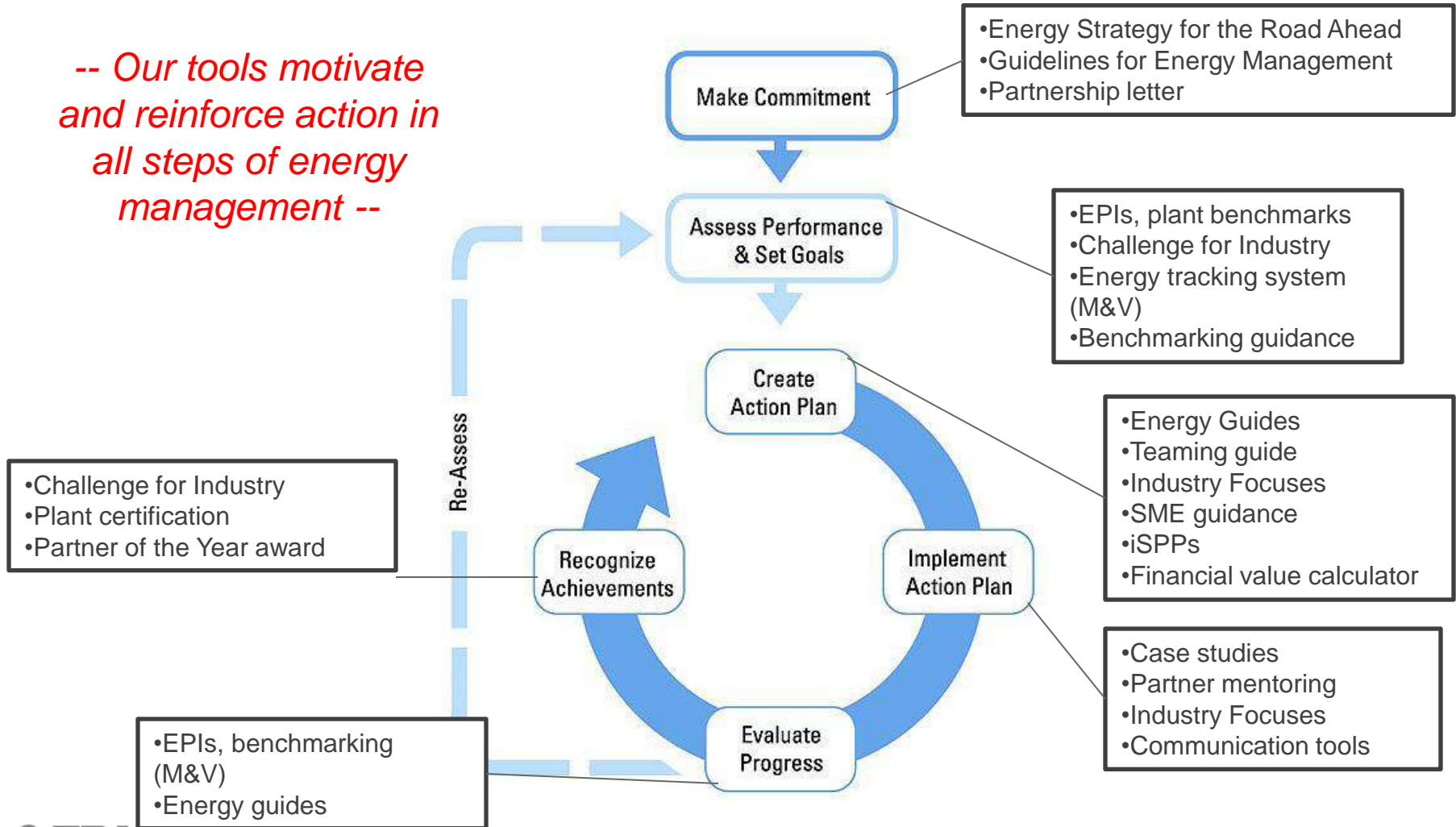
- A framework for how to develop an energy program
- Based on best practices from successful ENERGY STAR partner companies.
- Structured on a “plan-do-check-act” approach. Informed the ISO 50001 standard.
- The foundation for the energy programs of thousands of organizations in the U.S.

ENERGY STAR Guidelines for Energy Management



Your guide to ENERGY STAR resources

-- Our tools motivate and reinforce action in all steps of energy management --



Stimulate performance through energy benchmarking and tracking



Performance is the measure of a successful energy program.

ENERGY STAR offers unique tools that help companies benchmark & track energy performance:

Want to understand how a plant scores nationally for energy performance within its industry?

- Use **Plant Energy Performance Indicators (EPIs)**

Want to understand how a building scores nationally for energy performance within its sector?

- Use **Portfolio Manager**

Want to establish production-based energy intensity metrics, set goals, and track performance?

- Use **Energy Tracking Tool**

Tools for guiding manufacturing industries




For specific sectors, EPA convenes “**Industrial Focuses**”

- ✓ **Energy Guide** that identifies energy efficiency opportunities.
- ✓ **Energy Performance Indicator (EPI)** to benchmark performance of plants in the sector
- ✓ **Sharing of best practices & networking** among sector’s energy managers




Here are the industries & what we offer



Industry	Peer Exchange Network	Industrial Energy Guide	Energy Performance Indicator	
Cement Manufacturing	★	Published	2 nd Version Released	✓
Concrete	★	Published	In development	
Commercial Baking • Cookies & Crackers • Breads & Baked Goods	★	Planned	Released In development	✓
Corn Refining	★	Published	2 nd Version Released	✓
Dairy Processing • Fluid dairies • Cheesemaking • Ice Cream	★	Published	Draft	
Food Processing • Juice • Potato Products • Tomato Products	★	Published	Released Released Draft	✓
Glass Manufacturing • Fiberglass • Flat glass • Container glass	★	Published	Draft Released Released	✓

ENERGY STAR Industrial focuses – cont'd



Industry	Peer Exchange Network	Industrial Energy Guide	Energy Performance Indicator	
Motor Vehicle Manufacturing <ul style="list-style-type: none"> • Automobile Assembly Plants • Power train Plants 	★	Published	2 nd Version Released In development	✓
Metal Casting	★	In process	Draft (iron)	
Petrochemical Manufacturing	★	Published	Draft	
Petroleum Refining	★	Published	Private system recognized by EPA	✓
Pharmaceuticals	★	Published	Released	✓
Printing	★	In process	Exploring Options	
Pulp & Paper <ul style="list-style-type: none"> • Integrated Mills • Pulp Mills 	★	Published	Released Released	✓
Steel <ul style="list-style-type: none"> • Primary Steel • Mini Mills 	★	Published	Draft Draft	

Tools for guiding Small & Medium Manufacturers (SMMs)



Small and Medium Sized Manufacturers' Guide to Energy Management

U.S. ENVIRONMENTAL PROTECTION AGENCY

[Home](#) > [Buildings & Plants](#) > [Industry](#) > [Small and Medium Sized Manufacturers' Guide to Energy Management](#)

Small and Medium Sized Manufacturers' Guide to Energy Management

Finding energy savings starts by making energy management a priority.

Sustaining those savings and driving further reductions requires building energy management into your company's culture.

ENERGY STAR can help you get started regardless of the size of your company.



Understand the Basics of Successful Energy Management

Scale Energy Management to your Company

Begin Finding Energy Savings

Locate Resources and Assistance Programs to Offset Costs

Communicate to Employees and Customers

Tailored for SMM's unique needs



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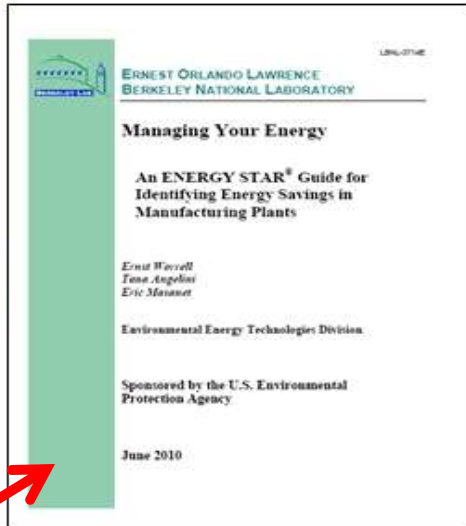
Communicate to Employees and Customers

Join ENERGY STAR

Begin Finding Energy Savings

Is capital tight? Better operating practices and equipment tune-ups help many manufacturers achieve significant energy savings – at little cost.

Start saving now. Read our easy-to-use guide to identify energy saving opportunities that can be made in your plant.



[Managing Your Energy: An ENERGY STAR Guide for Identifying Energy Savings in Manufacturing Plants](#) (407KB)

Need some quick tips? Use our animated tour of energy savings in a manufacturing plant. Share this with your employees to get them thinking about energy savings, too!



Tour a manufacturing plant and find ways to save energy by clicking on the icon above!

1

2

Get started on finding savings. Use the checklists below to begin to identify energy savings in your plant.

Lighting

Lighting is a significant energy use and cost for most manufacturers, and an area with many opportunities for savings.

3

	Lighting Focus Area	Action Items
✓	Are unoccupied areas lit?	See Section 4.1 in Managing Your Energy: An ENERGY STAR Guide for Identifying Energy Savings in Manufacturing Plants
✓	Are lights left on during non-work hours?	
✓	Are parts of the facility over-lit?	
✓	Is older, inefficient technology in use?	

4




Recognition is a tool!

- Creates a “prize” for good energy management.
- Helps to engage and motivate people.
- Raises awareness about energy efficiency opportunities & responsibilities.
- Builds support for energy initiatives.



ENERGY STAR tools for recognition



Category	Recognizes	Who can participate
	<p>World-class corporate energy management program</p>	<p>Companies that are ENERGY STAR Partners</p>
	<p>Best-in-class energy performance</p>	<p>Plants / sectors where an ENERGY STAR energy performance rating has been created</p>
	<p>Plants that reduce their energy intensity by 10% within 5 years or less</p>	<p>Any manufacturing plant</p>

ENERGY STAR Certified Plants

– *reward performance*



- “Best-in-class” recognition of energy performance in a sector
- Recognition based on site’s Energy Performance Score
 - using an ENERGY STAR Energy Performance Indicator (EPI)
- The plant must have a score 75 or higher – *within top quarter nationally for plant type.*
- Plants earn the ENERGY STAR annually.
- Available for industries where EPA provides an EPI.



ENERGY STAR Certification for these industries



- Automobile Assembly
- Cement
- Container Glass
- Cookie & Cracker Bakeries
- Flat Glass
- Frozen Fried Potato Processing
- Integrated Paper Mills
- Juice Plants
- Petroleum Refineries
- Pharmaceutical Manufacturing
- Pulp Mills
- Wet Corn Mills



ENERGY STAR Challenge for Industry – *reward achievement*



- **Recognizes 10 % improvement in energy intensity within 5 years or less.**
 - Calculated against an internal baseline at an industrial site.
- Sites participate by:
 - Selecting an **energy intensity metric**
 - Establishing a **baseline**
 - Setting a **10% improvement in 5 years goal**
 - **Registering** for the Challenge
 - **Verifying** savings if goal is achieved



Who can participate?

- **ANY** manufacturing site can take the Challenge.
 - No offices or warehouses.
- International sites of ENERGY STAR Partner companies can take the Challenge.
- To earn recognition, the site's parent company must be (or become) an ENERGY STAR partner.
 - Site can take Challenge before company becomes a partner.
- **YOU** can promote the Challenge to plants in your area.

What a plant receives



- Certificate
- Communications materials
- Profile on energystar.gov
- Congratulations to CEO
- Bragging rights



Share the ENERGY STAR Challenge for Industry with plants in your area



- 1) Industry makes use of the tool
 - 541 sites are taking the Challenge
 - 163 sites have already achieved it!
- 2) Motivates sites to action & creates an objective for their energy program
- 3) Establishes basic energy tracking & benchmarking
- 4) Promotes continuous improvement of energy performance
- 5) Supports energy management teams & helps identify successful strategies with ENERGY STAR tools
- 6) Links **YOUR** energy efforts to ENERGY STAR and the power of a broader campaign

Tools for meeting unique needs of states



- GHG permitting for manufacturing sites
 - When determining Best Available Control Technologies (BACT/PSD), Energy Guides are available to help identify energy-efficient technologies & practices
 - See www.energystar.gov/epis

Contact information

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All resources are located at:

www.energystar.gov/industry

www.energystar.gov/industrychallenge

www.energystar.gov/epis